

### Abstract

A system and method for configuring a device to perform a function, where the device includes a programmable hardware element and one or more fixed hardware resources. A program is stored which represents the function. A hardware configuration program is generated based on the program, specifying a configuration for the programmable hardware element that implements the function, and usage of the fixed hardware resources by the programmable hardware element in performing the function. A deployment program deploys the hardware configuration program onto the programmable hardware element, where, after deployment, the device is operable to perform the function, where the programmable hardware element directly performs a first portion of the function, and the programmable hardware element invokes the fixed hardware resources to perform a second portion of the function. An optional measurement module couples to the device and performs signal conditioning and/or conversion logic on an acquired signal for the device.